

# Executive Summary

## Prevalence

### ***Current Prevalence:***

The age and gender distribution of current asthma among Vermonters follows national trends suggesting those most affected by asthma are boys and women.

- 10% of Vermont adults and 8% of Vermont youth currently have asthma.
- The overall prevalence of asthma among adult men is 8% compared to a higher rate in women of 11%.

### ***Adult Demographics:***

Among Vermont adults, the highest rates of asthma are observed in non-whites, those with less education or lower income, and those that have health insurance. Although some variation is observed in asthma prevalence rates by county, when developing asthma prevention and control programs, it is important to target populations with known risk factors for asthma: income, education, health insurance, race, and age/gender.

- In Vermont, 15% of those making less than 125% of the Federal Poverty Level have asthma compared to only 5% in those making over 500% of the Federal Poverty Level.
- 14% of Vermonters with less than a high school diploma have asthma compared to 8% of those with a college degree or higher.
- 10% of insured Vermonters have asthma compared to 7% of those uninsured.
- There is little variation in asthma prevalence between counties in Vermont.
- Although not statistically significant, Vermont whites have lower asthma rates than non-whites (9% compared to 12%).

### ***Adults – Time Trends:***

With consistently higher rates of asthma in Vermont and throughout New England compared to the United States, preventing and controlling asthma is a top priority in Vermont.

- There have been no statistically significant changes in asthma prevalence in Vermont between 2001 and 2005.
- In 2005, the rate of current asthma in Vermont is higher than the U.S. rate.

### ***Asthma in Schools:***

Approximately 1 in 10 students currently has asthma, and 1 in 5 students has ever had asthma.

- Based on nurse reports, current asthma prevalence in Vermont schools (K-12) is 9%.
- 20% of all middle school students and 24% of all high school students have ever been diagnosed with asthma by a health care professional. Although high school students have higher rates than middle school students, the difference is not statistically significant. There are also no significant differences in asthma rates by gender in this population.

## **Morbidity**

### ***Impairment in Daily Function:***

Having asthma may impair one's ability to effectively work and sleep. Programs aimed at improving the quality of life of those with asthma should be targeted to those with obesity, depression, and a low education.

- 50% of Vermonters with asthma report that their asthma symptoms made it difficult for them to stay asleep for one or more days in the past 30 days.
- 19% of Vermonters reported one or more days in the past 12 months that they were unable to work or carry out usual activities due to their asthma.
- Persons with asthma report being unable to work at three times the rate of people who do not have asthma.

### ***Quality of Life and Depression:***

Programs aimed at improving the quality of life of those with asthma should incorporate activities to promote both physical and mental health.

- In Vermont, people with asthma report having a “fair” or “poor” quality of life at higher rates than people without asthma (24% versus 10%).
- People with asthma are more likely to be depressed than those without asthma. Among Vermont adults: 18% of people with asthma report having depression compared to 10% of those without asthma in 2005.

### ***Co-morbidities:***

Given that people with asthma may be dealing with multiple chronic conditions, initiatives aimed at reducing chronic disease will benefit from working together.

- Compared to Vermonters without asthma, Vermonters with asthma are more likely to have arthritis, cardiovascular disease, diabetes, and obesity.

## **Risk Factors**

### ***Workplace Exposure:***

Additional education and resources should be provided to schools in order to create and maintain healthy learning environments for all children.

- Of the 17 schools assessed in the Vermont Child Health Improvement Project's (VCHIP) Provider-School Nurse Coordination Project, seven (41%) had a written Indoor Air Quality management plan. Of these, 3 school plans included the reduction or elimination of allergens and irritants that exacerbate asthma (mold, pets, strong odors, dust mites, cockroaches).
- 6% of Vermonters with asthma were told by a health professional that their asthma was related to a job they have had.
- 6% of Vermonters with asthma told a health professional that their asthma was related to a job they had had.

### ***Tobacco Smoke Exposure:***

Programs must work to decrease smoking rates in Vermont, particularly among

students, with 1 in 10 middle school and 1 in 5 high school students currently smoking. Vermont should continue its efforts in increasing awareness of the dangers of secondhand smoke and in reducing exposure to secondhand smoke, particularly among those with asthma.

- Rates of smoking are similar in adults with and without asthma.
- Although not statistically significant, the prevalence of current smokers among middle and high school students is greater in those with asthma compared to those without asthma. Twice as many middle school students with asthma smoke compared to those without asthma (9% compared to 4%).
- Through combined efforts of the tobacco and asthma prevention programs, overall rates of exposure to secondhand smoke have decreased between 2002 and 2004. However, Vermonters with asthma report 20-25% higher rates of exposure to secondhand smoke in their homes and cars than people without asthma.
- Data from 2004 on secondhand smoke parental policies from the Adult Tobacco Survey report 82% of Vermont households with children prohibit smoking in their home and 90% of Vermonters with children prohibit smoking in their car.

## **Self and Clinical Care Management**

### ***Written Management Plans:***

With only 1 in 5 Vermonters with asthma on a written asthma management plan, programs must work to increase use and awareness of the importance of these plans among both adults and youth.

- Use of written asthma management plans has decreased among adult Vermonters from 33% in 2001 to 23% in 2005.
- School nurses reported similar rates of use of asthma management plans (23%) among their students compared to the rate observed among adults.

### ***Routine Care Visits and Asthma Education:***

With less than half of Vermonters with asthma visiting their physician for routine care in the past year, physicians and other health care professionals must be educated on the importance of routine care visits for their patients with asthma.

- 39% of adults with asthma report that their doctor, nurse, or other health professional had talked with them about how to recognize early signs and symptoms of asthma attacks and how to respond to them in the past 12 months.
- Almost half of all adult Vermonters with asthma did not see a physician for a routine care visit in the past year.

### ***Medication Use:***

With only 1 in 4 Vermonters with asthma taking daily maintenance medication, it is crucial to increase physician education on the importance of use of appropriate daily medication for long-term control of persistent asthma.

- Among Vermonters with current asthma in 2005, when asked if they had used asthma medication in the past 30 days to prevent an asthma attack, 41% had

never used medication, approximately 36% used medication occasionally, and 23% took asthma medication daily or almost every day.

### ***Immunizations:***

Although rates of immunization are higher among those with asthma compared to the rest of the population, there are still a substantial number of Vermonters with asthma who are not receiving the proper immunizations. Asthma and immunization programs should work together to promote messaging on the importance of vaccinations in persons with asthma and other chronic conditions.

- Vermont adults with asthma are more likely to get a flu shot each year than those without asthma (39% versus 24%).
- Vermont youth (under 18) with asthma are also statistically more likely to get a flu shot than those without asthma (41.3% versus 13.7%).
- Vermonters with asthma are more likely to have ever had a pneumococcal vaccination (84% versus 65%).

## **Indications of Poor Asthma Management**

### ***Urgent Care Visits:***

- Almost one quarter of people with asthma visited their health care professional for urgent treatment of worsening symptoms in the past year.

### ***Emergency Room Visits:***

The age and sex distribution of ER visits mirrors prevalence trends, suggesting asthma severity does not vary by age or sex. With roughly 1 in 8 Vermonters with asthma visiting an ER in the past year, increasing self and clinical care management of Vermonters with asthma should decrease the frequency of ER visits.

- Roughly 13% of Vermonters with asthma visited the ER or urgent care facility for their asthma in the past 12 months.
- There were a total of 2394 visits to the Emergency room by Vermont residents to Vermont and New Hampshire hospitals in 2003, up from 2221 visits in 2002.
- 2048 Vermonters made 2394 visits to the ER in 2003: (90% of these people made only one visit to the ER, 8% made 2 visits to the ER, and 3% made three or more visits to the ER).
- In addition to having overall higher prevalence rates than men, females visited the ER more often than males in 2003, with 1393 visits compared to 1001 visits among males.
- Females aged 20-39 and males aged 0-9 had the highest rates of ER visits. This age/gender distribution is similar to what is seen nationally.

### ***Temporal Patterns in Emergency Room Visits:***

With the seasonal variation in asthma-related ER visits in Vermont, the media could play a valuable role in publicizing the importance of asthma self- and clinical care management during times of the year with the highest rate of ER visits.

- Frequency of ER visits among people with asthma vary by the time of year, the rates peaking in September and October.

### ***Risk Factors for Emergency Room and Urgent Care Visits:***

Vermonters most at risk of visiting an ER or their physician for urgent care are those with the lowest incomes and those without health insurance. Efforts to increase self- and clinical care management, which will result in fewer ER visits, should focus on this population, in addition to those who smoke or are obese. It is also important to explore characteristics of the major health systems within the Vermont counties reporting the lowest and highest rates of ER visits.

- Having a low income is associated with an increased risk of visiting a doctor for urgent care of worsening symptoms due to asthma
- Not having health insurance, having a low income, being a smoker, and being obese are associated with an increased risk of visiting an emergency room due to asthma
- The county with the highest rates of asthma-related ER visits is Rutland.

### ***Hospitalizations:***

As rates of hospitalizations for asthma have stabilized, increased efforts are needed to continue the decline observed in the 1990s. Efforts to decrease the number of hospitalizations related to asthma should focus on the youngest and oldest age groups.

- Vermont has made significant progress in decreasing hospitalization rates between 1989 and 2004, mainly due to large decreases in rates among youth under 15 and adults 65 and older.
- Vermont contributed 444 discharges with a primary diagnosis of asthma in 2003 to the national total of 469,738.

### ***Deaths:***

- Between 1999 and 2003 there were 35 deaths due to asthma in Vermont.

## **Costs**

Improvements in asthma management will result in decreases in the number of hospitalizations and emergency room visits related to asthma. In addition to improving the overall quality of life of those suffering from asthma, these efforts will dramatically decrease health care costs related to asthma.

- Hospital charges related to asthma were approximately \$3.5 million in Vermont for 2004.
- Inpatient hospitalizations make up over two thirds of all hospital-related charges, costing over \$6,000 per visit on average.
- Emergency room visits make up over one quarter of all hospital-related charges, costing roughly \$400 per visit on average.